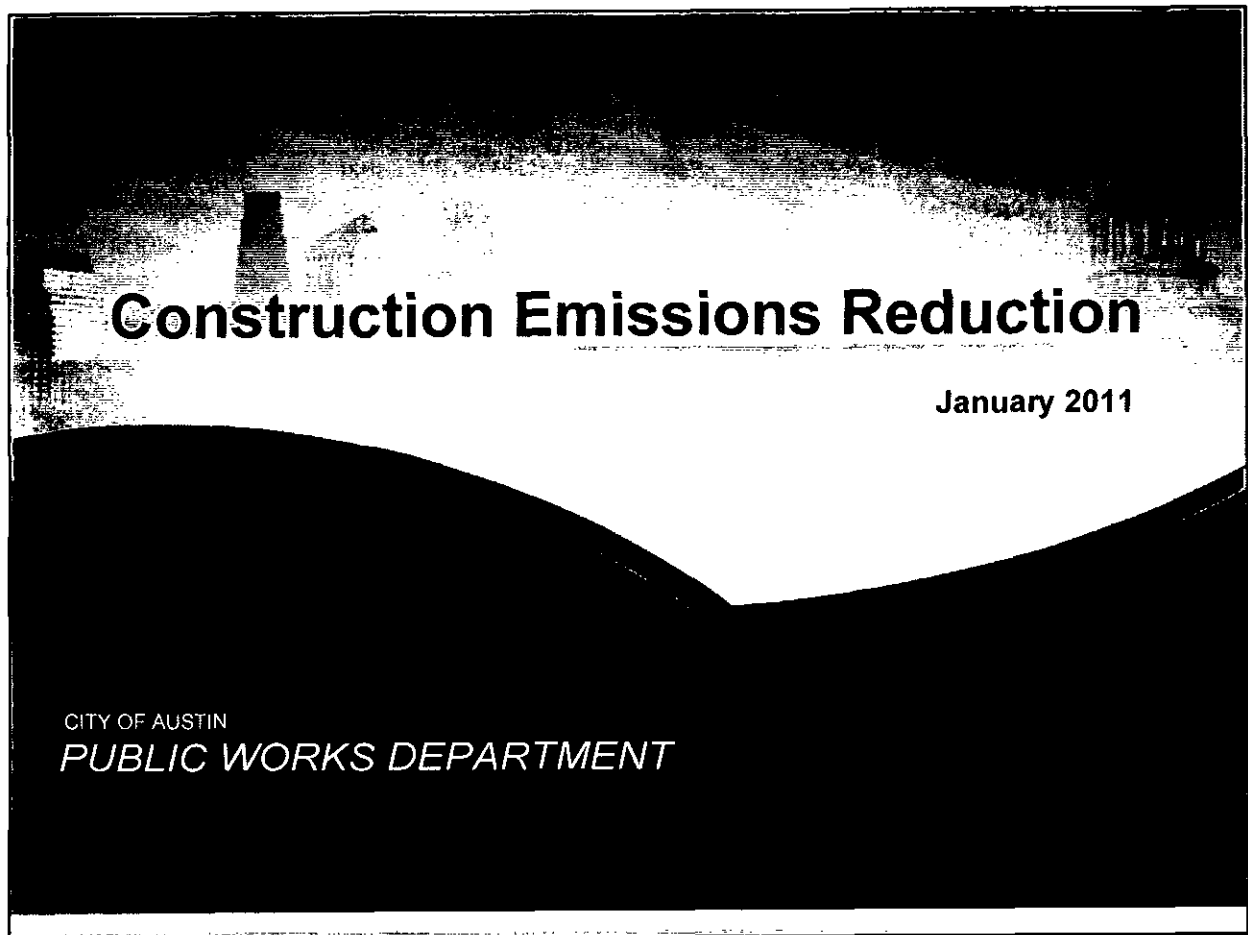


Late Backup



Why are We Here?

Council Resolution 20100211-019

"The City Manager is directed to identify actionable steps to reduce NO_x, particulate matter, and greenhouse gas emissions associated with construction and demolition projects, including, but not limited to City capital improvement projects..."

Construction Emissions Reduction: Work in Progress

■ PWD Director responded to Council on April 27th with the following work plan:

- Form a cross-departmental team
 - Public Works
 - Fleet Services
 - Austin Climate Protection Program
 - Watershed Protection
 - Planning and Development Review
 - Parks and Recreation
- Seek input from community stakeholders
- Review initiatives undertaken by other entities
- Identify actionable items

Construction Emissions Reduction: Actionable Tasks

■ Fleet Operations Analyses

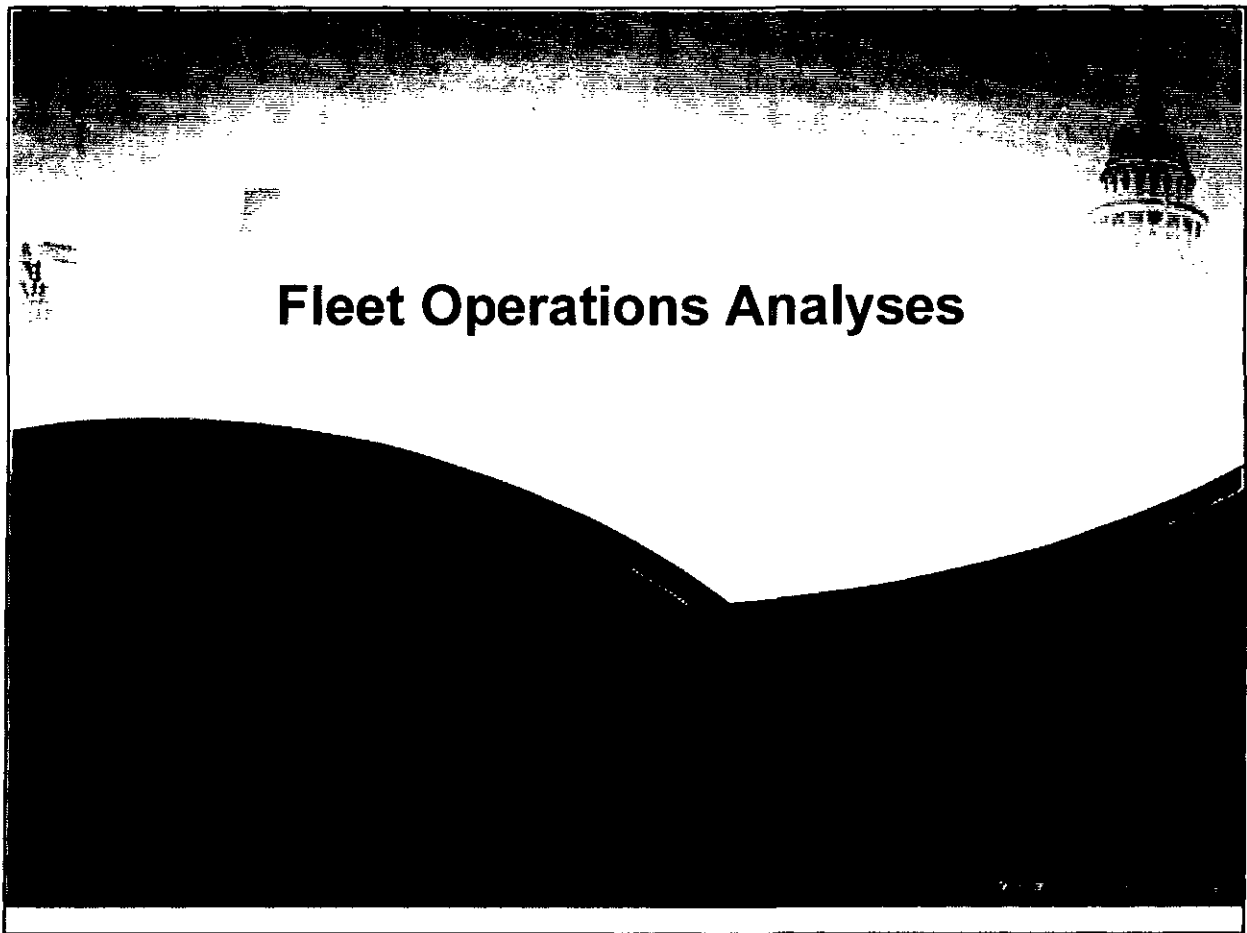
1. Review of the Preventive Maintenance (PM) Program
2. Analysis of Emissions from COA Heavy Equipment
3. Alternative Fuels Analysis
4. Alternative Fuels Availability/Refueling

■ Practices and Specifications

5. Anti-Idling Ordinance Enforcement
6. Awareness and Education Programs
7. Incorporation into CIP Project Specifications

■ Policy Changes

8. Revisions to Land Development Code



Item 1 - Preventative Maintenance

■ Task

- Review fleet preventive maintenance practices to ensure vehicles are operating at maximum efficiency.

■ Findings

- Fleet has an optimum PM program in place for preventative maintenance of COA Fleet.
- Emissions levels can be improved with conversion of the fleet to higher efficiency power sources and the use of alternative fuels.

■ Challenges

- Cost of maintenance will increase with new technologies (e.g. diesel particulate filters).
- Maintenance of multiple types of equipment may present a challenge to operators and to Fleet Services.

Item 2 – Emissions Analysis of the COA Heavy/Construction Equipment Fleet

■ Task

- Review COA heavy equipment/construction fleet for emissions improvement potential.

■ Findings

- Fleet Services has applied for and has a pending Texas Clean Fleet Program (TCFP) grant in the amount of \$5.0M (\$8.3M total program cost) to replace on-road solid waste trucks and other on-road heavy vehicles.
- PWD looked at grant opportunities for engine replacement and found them to be economically infeasible and disruptive of operations.
- Fleet is undergoing limited testing of electric vehicles.
- PWD is converting its construction support fleet to hybrids.

■ Challenges

- Range and power of CNG engines do not support requirements.

Item 3 – Alternative Fuels Analysis

■ Task

- Review the applicability and feasibility of incorporating expanded use of alternative fuels by the COA heavy equipment fleet.

■ Findings

- COA already has the ability to use Bio-diesel fuel (B-20) for all its heavy vehicles (84% of diesel use is B-20).
- B-20 reduces total hydrocarbons by up to 30%, CO by up to 20%, and total particulate matter up to 15%.
- Compared to diesel, biodiesel production and use produces 78.5% less CO₂ emissions.
- Biodiesel is nontoxic and biodegradable.

■ Challenges

- Availability of alternative fuels may discourage use.

Item 4 – Alternative Fuels Availability/Refueling (COA use)

■ Task

- Review the availability of alternative fuels to support wide-scale usage on COA CIP projects.

■ Findings

- The COA owns the following fueling stations: 1 CNG (compressed natural gas), 5 LPG (liquid propane gas), 4 E85, 7 B20, and 1 DEF (diesel emission fluid).
- North Austin needs a new multi-alternative fuel station that has CNG and other fuels. A CNG station in the north will support greater use of alternative fuels in SWS trucks.

■ Challenges

- The estimated project cost to construct a CNG refueling station in North Austin is approximately \$2.0M.
- The future location of a North Austin service center must be finalized.

Item 4 – Alternative Fuels Availability/Refueling (Retail)

■ Task

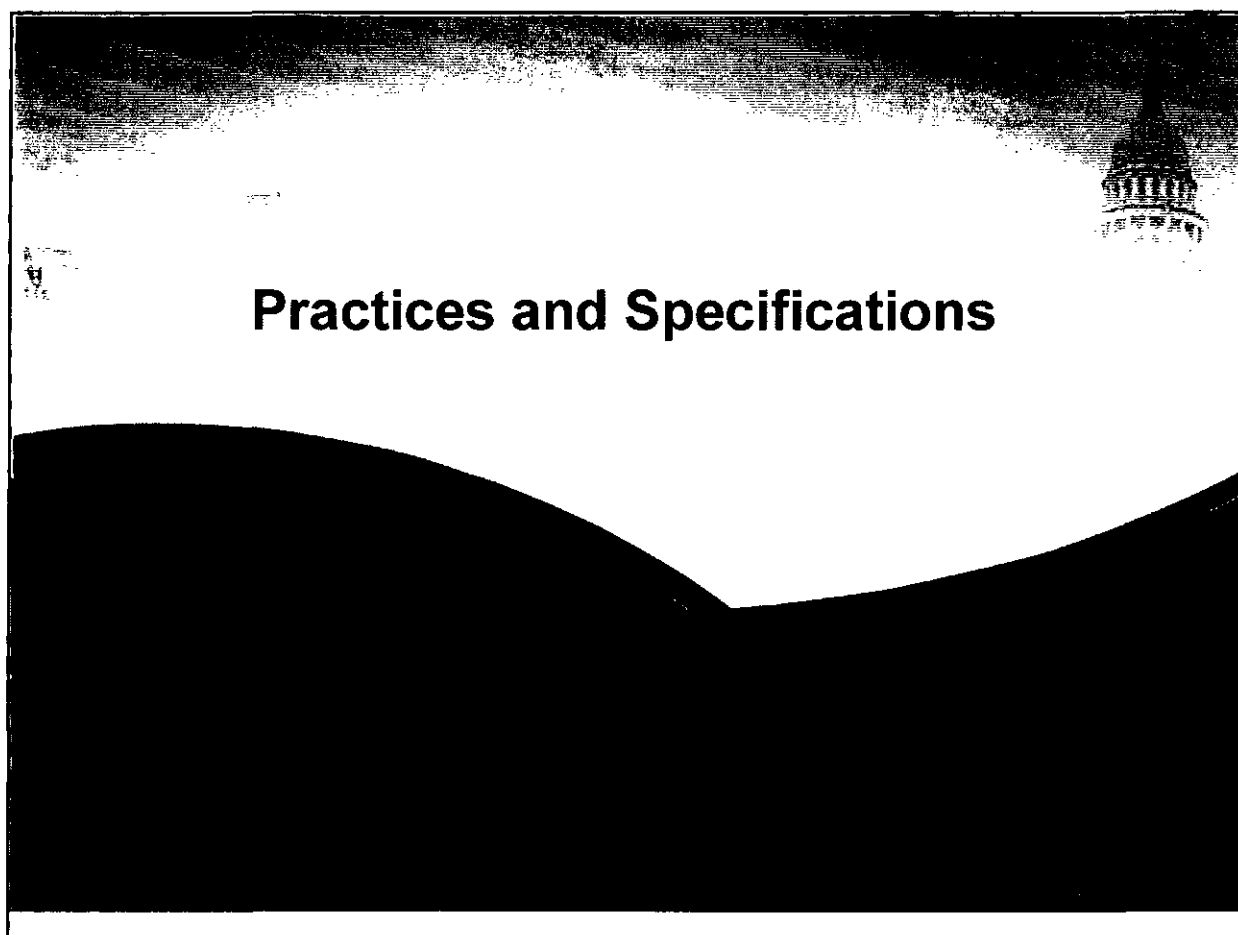
- Review the availability of alternative fuels to support wide-scale usage on private construction projects.

■ Findings (Retail)

- There are no retail bio-diesel fuel stations for private contractors to fill up construction equipment with bio-diesel fuel.
- Contractors/subcontractors on City CIP projects will require either authorization to use City refueling facilities or bulk purchase and storage of fuels on the construction site.

■ Challenges

- Private sector use of alternative fuels must be stimulated.
- City facilities will need to be expanded if contractor use is allowed on CIP projects.
- Feasibility of storage on construction sites must be investigated on a project-by-project basis.



Item 5 – Anti-Idling Ordinance Enforcement

■ Task

- Review the abilities of the COA to establish and enforce anti-idling requirements.

■ Findings

- TCEQ Regulations - TCEQ has established Chapter 114, Subchapter J, Division 2: Locally Enforced Motor Vehicle Idling Limitations.
- This rule limits heavy-duty on road motor vehicle idling to five consecutive minutes.
- This rule does not apply to stationary diesel construction equipment or construction vehicles not licensed to operate on the highway.
- Local governments in Texas that sign a memorandum of agreement (MOA) with the commission can be delegated enforcement ability of the idling limitations.

Item 5 – Anti-Idling Ordinance Enforcement

■ Findings (continued)

- The City of Austin has a MOA with the state to enforce this rule. Per state law, this rule can only be enforced during April 1 through October 31 (Ozone Season)
- The City of Austin's idling ordinance (Chapter 6-1) establishes enforcement authority for this state rule.

■ Challenges

- State law will have to be changed to allow year-round enforcement.
- The City must clarify which agencies are responsible for enforcement of the ordinance and provide education and training to City personnel.

Item 6 – Awareness and Education Programs

■ Task

- Review the current status of the City's awareness and education programs .

■ Findings

- City has partnered with AISD to promote anti-idling measures.
- Anti-idling is part of ACPP internal training and messaging
- Anti-idling emissions calculator is posted on PWD web site.

■ Challenges

- Make anti-idling toolkit and emissions calculator more widely available.
- Present as a topic at local construction forums and to interested groups (e.g. ACEA, AGC, HCA, BCA).
- Promote awareness on the availability of alternative fuels.

Anti-Idling Ordinance Calculator

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Item 7 – Incorporation into CIP Project Specifications

■ Task

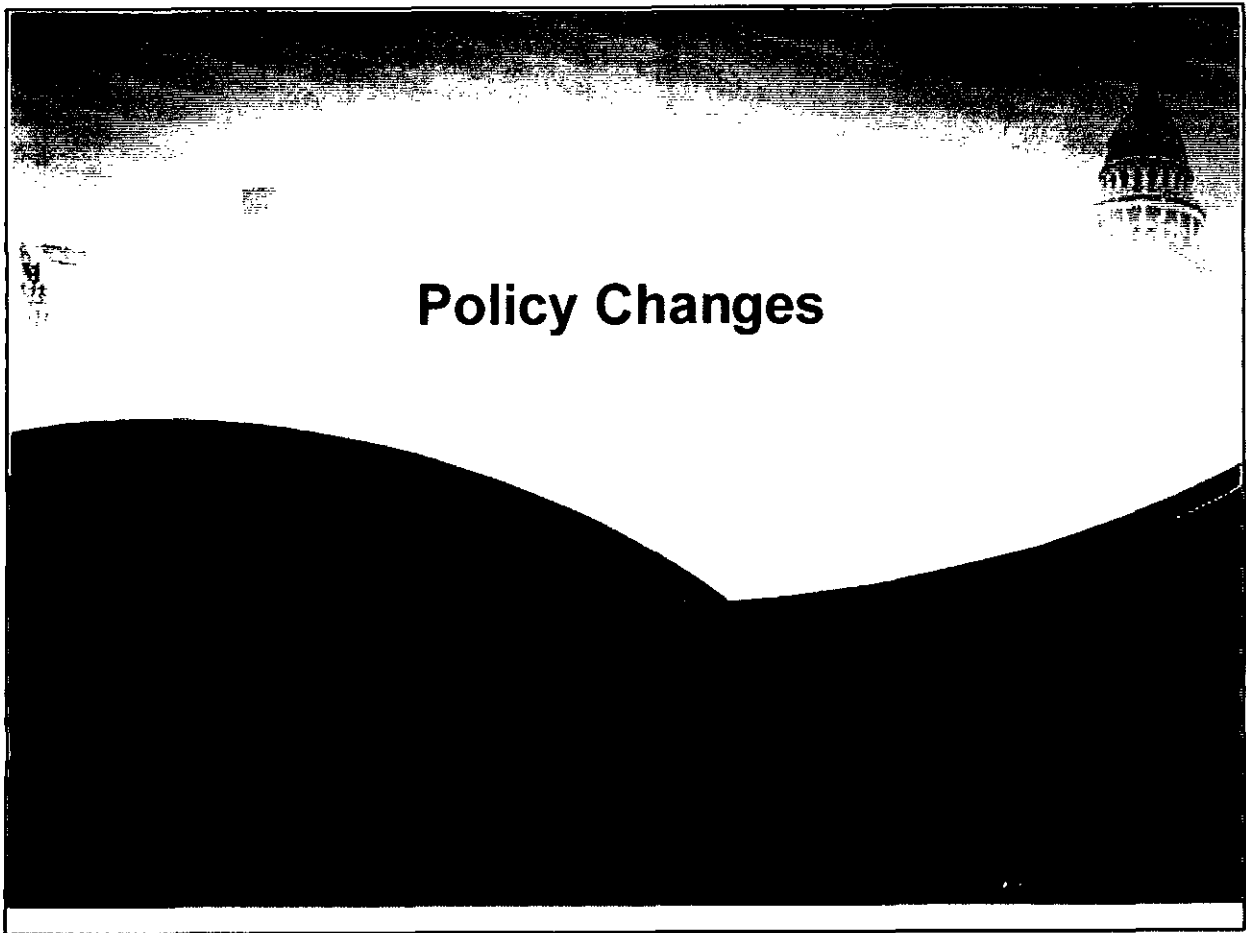
- Incorporate emissions reduction requirements into City CIP project specifications.

■ Findings

- PWD has developed requirements and integrated into project specifications beginning in September 2010. “Test” projects include the Animal Services Center, Group 8B Road Reconstruction, African American Cultural Center, and WPD projects.
- Costs on the Animal Services Center project indicate 20% increase in fuel costs.

■ Challenges

- Incorporation of requirement will increase project costs and may require on-site storage/use of City facilities.
- The impact on small businesses will need to be evaluated.



Item 8 – Revisions to Land Development Code

■ Task

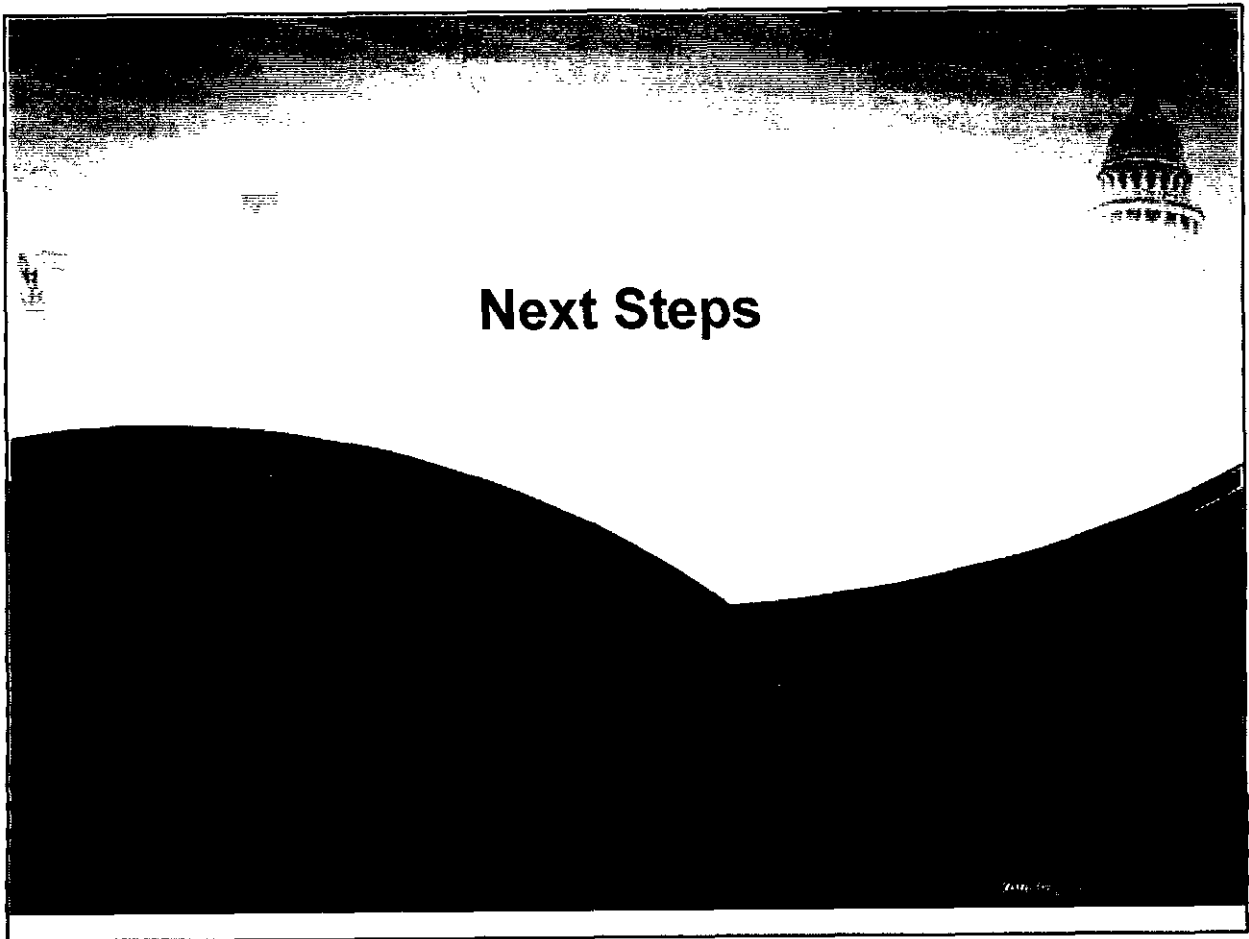
- Review the City's Land Development Code to identify opportunities to impact private sector construction projects.

■ Findings

- PDRD has determined that the City has limited authority to enforce the use of alternative fuels/equipment efficiencies on private sector construction equipment.
- The City may encourage private contractors to voluntarily reduce emissions by incenting the use of biodiesel and providing resources like anti-idling toolkit.
- AE Green Building/LEEDS certified projects may incorporate innovation credits for reductions of emissions.

■ Challenges

- The limited City enforcement authority makes private sector participation voluntary. Private sector developers/contractors may resist implementation due to higher costs.



Next Steps

- Continue conversions of City's heavy equipment fleet.
 - Continue to seek funding sources for equipment conversions.
 - Program alternative fueling stations into capital improvement projects.
- Expand implementation of emissions reduction requirements on CIP and other projects.
 - Incorporate emissions reductions specifications into CIP projects.
 - Evaluate emissions reductions as a criteria when using "best value" procurement techniques.
 - Address emissions reductions under the Green Purchasing program.
 - Evaluate the impact on small businesses and develop assistance programs.
 - Construct additional fueling stations.
 - Report on cost experiences and lessons learned.

Next Steps

- **Expand awareness and education program resources and availability.**
 - Improve availability and content of on-line resources.
 - Develop and execute a more aggressive outreach program with private sector groups.
 - Seek opportunities to partner with private sector entities on funding and implementation opportunities.
- **Provide recommendations to address changes to policy and legislative requirements.**
 - Year round enforcement of anti-idling ordinance.
 - Review opportunities to incorporate emissions reductions through the building code.